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EXAMINER

KNABLE, GEOFFREY L

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,148	Applicant(s) LACAGNINA ET AL.	
	Examiner Geoffrey L. Knable	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 30-58 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 30-58 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>9/18/06; 5/22/08</u> . | 6) <input type="checkbox"/> Other: ____. |

1. The disclosure is objected to because of the following informalities:

At page 5, line 35 - page 6, line 7 of the specification, the references to certain claims by number should be removed as claim numbers can vary during prosecution.

At page 18, line 24 of the specification, it appears that the reference to "Figs. 6 to 10" should instead refer to "Figs. 7 to 10" as fig. 6 does not appear to correspond to this alternative embodiment.

Appropriate correction is required.

2. Claims 35, 37, 41, 49-52, 55 and 58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 35 requires that the step of assembling the belt structure on the auxiliary drum is carried out "after said radial expansion step and simultaneously with the mutual junction step". Assuming that this is in reference to the radial expansion and mutual joining defined in claim 31 (from which this claim depends), it appears that claim 35 is inconsistent with claim 31, this creating an ambiguity. In particular, claim 31 defines that the radial expansion step joins the belt to the underbelt insert. As such, the belt structure would have to have already been assembled, this being inconsistent with the claim 35 requirement defining that the assembling of the belt is after the radial expansion step. Clarification is required of this inconsistency.

In claim 37, line 1, no literal antecedent has been established for "said junction step".

In claim 41, line 3, the phrase "a tire under working" is awkward and confusing.

In each of claims 49, 50, 51, 52 and 58, no antecedent has been established for the/said “expandable support”.

In claim 55, line 1, the antecedent for “said devices” is ambiguous as there are different “devices” defined in the last lines of claim 44 as well as in claim 53. It would appear that “for application of the tread band” should be added after “devices” (as in claims 54 and 56) to avoid this ambiguity.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 30, 31, 36, 37, 39, 44, 45, 50, 53 and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Takagi (US 2002/0153083).

Takagi discloses a method of manufacturing tires including disposing a carcass on a primary drum (e.g. 75), assembling a belt structure on an auxiliary drum (54), picking up the belt from the auxiliary drum (using “18”) and transferring the belt structure to a centered position with respect to the carcass and toroidally shaping the carcass to engage the belt structure (e.g. paragraph [0073]). Further, during assembling the belt structure, at least one underbelt insert (72) is associated with a radially internal position of the belt structure (e.g. paragraph [0067]). Claim 30 is therefore anticipated. A corresponding apparatus as required by claim 44, including devices (e.g. “55”) for application of the underbelt insert to the belt structure, is also anticipated.

As to claims 31 and 45, the underbelt inserts are wound on an expandable support (55) which is expanded for joining with the belt structure. As to claims 36-37, the belt structure is picked up from the auxiliary drum “54” and then located around the expandable drum before expansion to join the inserts to the belt structure (e.g. paragraph [0067]). As to claims 39, 53 and 54, the tread is applied around the belt structure on the auxiliary drum (paragraph [0066]). As to claim 50, the expandable support “55” is spaced from the auxiliary drum “54”.

7. Claims 30, 39, 43-45, 51, 53 and 54 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyanaga et al. (US 5,248,357).

Miyanaga et al. discloses a method of manufacturing tires including disposing a carcass on a primary drum (13), assembling a belt structure on an auxiliary drum (12), picking up the belt from the auxiliary drum (using "14") and transferring the belt structure to a centered position with respect to the carcass and toroidally shaping the carcass to engage the belt structure (Figs. 4-5). Further, during assembling the belt structure, at least one underbelt insert (6) is associated with a radially internal position of the belt structure (e.g. Fig. 2). Claim 30 is therefore anticipated. A corresponding apparatus as required by claim 44, including devices for application of the underbelt insert to the belt structure at a location spaced from the carcass structure, is also anticipated.

As to claims 39, 53 and 54, the tread is applied around the belt structure on the auxiliary drum (Fig. 2). As to claim 43, the carcass is wound on the primary drum "13". As to claim 45, drum 12 is an expandable support. As to claim 51, the drum 12 also forms the surface of the auxiliary drum.

8. Claims 30, 31, 33-39, 42, 44, 45, 50, 51-54 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Goodfellow (US 4,555,287).

Goodfellow discloses a method of manufacturing tires including disposing a carcass on a primary drum (note carcass "80" in fig. 7 and col. 3, lines 35-53 indicating that the carcass is shaped at this stage and thus a primary shaping drum is implicit), assembling a belt structure ("75") on an auxiliary drum ("10" in figs. 1-7 embodiment and "90" in figs. 8-12 embodiment), picking up the belt from the auxiliary drum (using a "conventional carrier ring" - note col. 3, lines 37-47 - or transfer ring "91") and transferring the belt structure to a centered position with respect to the carcass and

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toroidally shaping the carcass to engage the belt structure (Fig. 7). Further, during assembling the belt structure, at least one underbelt insert (e.g. part “73/70/71” or parts “77/74”) are associated with a radially internal position of the belt structure. Claim 30 is therefore anticipated. A corresponding apparatus as required by claim 44, including devices (10) for application of the underbelt insert to the belt structure, is also anticipated.

As to claims 31 and 45, the underbelt inserts are applied on an expandable support (10) which is expanded for joining with the belt structure. As to claims 33-34, during radial expansion, the underbelt inserts are rotated (parts 70/71/74 are clearly rotated and further, in figs. 13+, the part “77” is also rotated) and the axially inner part for engagement with the belt is substantially parallel to the belt. As to claim 35, note fig. 5. As to claims 36-37, note fig. 10-11. As to claim 38, 42, 52 and 58, Goodfellow suggests “consolidation” by conventional techniques (col. 3, lines 28-34) which would have been understood as being a pressing step. As to claims 39, 53 and 54, the tread (78) is applied around the belt structure on the auxiliary drum (figs. 6 or 9). As to claim 50, the expandable support “10” is spaced from the auxiliary drum “90” in the figs. 8-11 embodiment. As to claim 51, the expandable drum defines the surface of the auxiliary drum in the figs. 3-7 embodiment

9. Claims 32, 40, 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) or Goodfellow (US 4,555,287) as applied above, and further in view of Mitsuhashi et al. (US 6,576,077).

It is known in this art to be desirable to form various tire components, including a tread and belt edge cushion, by spiral winding a strip of rubber to enhance manufacturing flexibility by avoiding having to form the full size component and thereby require different extruder dies, etc. to make any changes - Mitsuhashi et al. is exemplary (esp. col. 1, lines 7+ and col. 3, lines 4-20). It therefore would have been obvious to form the tread and/or underbelt insert of the primary references by spiral strip winding to enhance production flexibility - only the expected and predictable results would have been achieved.

10. Claims 40, 46 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miyanaga et al. (US 5,248,357) as applied above, and further in view of Mitsuhashi et al. (US 6,576,077).

It is known in this art to be desirable to form various tire components, including a tread and belt edge cushion, by spiral winding a strip of rubber to enhance manufacturing flexibility by avoiding having to form the full size component and thereby require different extruder dies, etc. to make any changes - Mitsuhashi et al. is exemplary (esp. col. 1, lines 7+ and col. 3, lines 4-20). It therefore would have been obvious to form the tread and/or underbelt insert of Miyanaga et al. by spiral strip winding to enhance production flexibility - only the expected and predictable results would have been achieved.

11. Claim 56 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) or Goodfellow (US 4,555,287) or Miyanaga et al. (US 5,248,357) as applied to claim 53 above, and further in view of the admitted state of the prior art.

The primary references apply the tread to the belt before joining with the carcass. It however is known and conventional in this art to apply the tread either during building of the belt or later after joining with the carcass - the admitted state of the prior art (esp. page 2, line 21 - page 3, line 15 of the specification), which suggests that the application of the tread at the belt building stage is optional, is exemplary - only the expected and predictable results would have been achieved.

12. Claims 41 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) or Goodfellow (US 4,555,287) or Miyanaga et al. (US 5,248,357) taken in view of the admitted state of the prior art as applied above, and further in view of Mitsuhashi et al. (US 6,576,077).

The admitted state of the prior art is applied as above to claim 56. As to the additional requirement that the tread be formed by spiral winding, it is known in this art to be desirable to form various tire components, including a tread, by spiral winding a strip of rubber to enhance manufacturing flexibility by avoiding having to form the full size component and thereby require different extruder dies, etc. to make any changes - Mitsuhashi et al. is exemplary (esp. col. 1, lines 7+ and col. 3, lines 4-20). It therefore would have been obvious in this art to form a tread by spiral strip winding to enhance production flexibility - only the expected and predictable results would have been achieved.

13. Claims 30, 31, 33, 34, 44, 45, 47, 48 and 50 are rejected under 35 U.S.C. 103(a) as being unpatentable over Holroyd et al. (US 4,738,738) taken in view of Holroyd et al. (US 5,201,975) and Sumner (US 4,561,927).

Holroyd et al. '738 discloses a method of manufacturing tires including disposing a carcass on a primary drum (not shown but described at col. 6, lines 32+), assembling a belt structure on an auxiliary drum (fig. 3), picking up the belt from the auxiliary drum (using "1") and then the belt is located in a centered position with respect to the carcass followed by toroidally shaping the carcass to engage the belt structure (fig. 9). Further, during assembling the belt structure, at least one underbelt insert (36) is associated with a radially internal position of the belt structure (fig. 8). Holroyd et al. '738 therefore teaches a method as claimed except that it is described that the carcass is moved into the belt/tread (col. 6, lines 41-47) rather than the belt being transferred to the carcass as claimed.

Sumner is directed to essentially the same process as described by Holroyd et al. '738 (note also that Holroyd et al. '738 appears to correspond to the UK application referred to at col. 1, lines 29-30 of Sumner) and suggests that the mold itself (functioning to transfer the tread (and belts)) can be advanced to further assembly stages (col. 3, lines 46-50). Further, Holroyd et al. '975, directed to a similar process to that of Holroyd et al. '738, discloses transferring the belt/tread to around the carcass for assembly of the belt with the carcass (e.g. col. 2, lines 52-62). In view of these teachings, to transfer the belt(/tread) of Holroyd et al. '738 to around the carcass for assembly with the carcass (rather than transferring the carcass) would have been obvious and lead to only the expected and predictable results. A method as required by claim 1 would therefore have been obvious. A corresponding apparatus as required by claim 44, where the part "1" of Holroyd et al. that holds the belt(/tread) functions as a

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transfer member and further including devices for application of the underbelt inserts (36) to the belt structure (e.g. col. 6, lines 19-31), would also have been obvious for the same reasons.

As to claims 31 and 45, the underbelt inserts are wound on an expandable support which is expanded for joining with the belt structure (col. 6, lines 19-31). As to claims 33-34, the expandable support is described (at col. 6, lines 27-31) as being of the first type, i.e. "8"/"10" in fig. 1, and therefore is initially cylindrical whereas after expansion of the inflatable bag (10), the inserts are contoured to match the belt - the inserts therefore would have undergone some rotation as claimed. As to claim 47, note inflatable bag "10". As to claim 48, to replace the inflatable bag "10" of Holroyd et al. '738 with one having opposite end flaps engaged with flanges would have been obvious in view of the teachings of Sumner of such a bladder construction as an improvement over a bladder as in Holroyd et al. '738 (note esp. col. 1, lines 55+ as well as again that Sumner is apparently specifically suggesting improving the Holroyd et al. '738 bladder structure as the UK application referred to at col. 1, lines 29-30 of Sumner apparently corresponds to Holroyd et al. '738). As to claim 50, in Holroyd et al. '738, the expandable support 8/10 used to apply the belt inserts is separate from the auxiliary drum of fig. 3.

14. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) as applied to claims 44/45 above, and further in view of at least one of [Holroyd et al. (US 4,738,738) and Barber et al. (US 3,143,450)].

Takagi discloses that the belt under cushion drum "55" is radially expandable but does not provide further detail of the drum construction. Holroyd et al. '738 (note esp. drum 8/10 in fig. 1 and col. 6, lines 19-31 indicating that this type of drum is used to apply the belt edge inserts) and Barber et al. (note esp. drum 7/8/9) each describe drums that, like Takagi, are expandable to apply tire components from the inside to an overlying components, the drum in each case including an inflatable bladder to effect the required expansion. In view of these teachings of a suitable and effective manner of effecting an analogous radial expansion of a tire drum, the ordinary artisan would have found it obvious to utilize an inflatable bladder to effect the required drum expansion for drum "55" in Takagi - only the expected and predictable results would have been achieved.

15. Claim 48 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) taken in view of at least one of [Holroyd et al. (US 4,738,738) and Barber et al. (US 3,143,450)] as applied to claim 47 above, and further in view of Sumner (US 4,561,927).

As to claim 48, to replace the inflatable bag (such as "10" of Holroyd et al. '738 or "9" of Barber et al.) with one having opposite end flaps engaged with flanges would have been obvious in view of the teachings of Sumner of such a bladder construction as an improvement over a bladder such as in Holroyd et al. '738 (note esp. col. 1, lines 55+ as well as again that Sumner is apparently specifically suggesting improving the Holroyd et al. '738 bladder structure as the UK application referred to at col. 1, lines 29-30 of Sumner apparently corresponds to Holroyd et al. '738).

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16. Claim 49 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takagi (US 2002/0153083) or Goodfellow (US 4,555,287) or Miyanaga et al. (US 5,248,357) as applied above, and further in view of Pacciarini et al. (US 4,288,265).

To provide an expandable belt building drum to have apertures through which radially movable sectors operate is known and obvious in this art in view of Pacciarini et al. which suggests such a drum configuration (note sectors 18 operable through apertures in drum 16) as a suitable and desirable configuration for belt building (e.g. note col. 5, lines 28+ for advantages thereof).

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Motomura et al. (US 5,215,612) is another example of building a belt structure with underbelt inserts (4a) prior to assembling with a carcass but is at present no more relevant than the applied prior art.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Geoffrey L. Knable/
Primary Examiner, Art Unit 1791

G. Knable
April 24, 2010